RELIABILITY IMPROVEMENT IN MEDIUM VOLTAGE DISTRIBUTION SYSTEM

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Abstract

The reliability study in Electricity network in Sri Lanka is seldom carried out. Moreover in areas where this is carried out, it is limited to calculate SAIFI; SADI by means of using the failure data collected from the consumer service centres. This is not enough to evaluate and improve the reliability levels of the network.

The failures of Medium Voltage lines and equipment result in revenue losses to the utilities as well as to consumers. In Sri Lanka the utilities are concerned about collection of revenue but not much about reliability issues.

This study focuses on the following:

1. Introduction of Reliability concepts to utilities in Sri Lanka
2. Development of a computer based model to calculate reliability levels
3. Proposing methods to improve the reliability such as better maintenance

practiced and policies, augmentation of lines and switching arrangements. The methodology in this project was developed using the MS Excel Programme for Medium Voltage Network of Consumer Service Centre (CSC) Area, Boralesgamuwa and tested for that of Fulleorton CSC Area, Kalutara. This methodology could be used for any part of the Medium Voltage Netwerk and extended to Localised Low Voltage Systems for evaluation and improvement of reliability.